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ing of *boc-land* under the *trinoda necessitas* resembled the holding of a benefice in later times; but the holders of *boc-land* were not vassals of a lord. Their services were due to the state rather than to the king. The king was not the universal landlord until after the conquest, when the Norman lawyers persisted in describing proprietorship as a tenancy. At the same time a great deal of proprietorship was converted into tenancy. The position of the isolated proprietor was unsafe; and proprietors very generally converted their inheritances into tenures, under the overlordship of the king or some other great lord. M. Glasson describes the various forms of tenure which existed under the feudal system, and the condition of the tenants. A large part of the work is devoted to legal procedure and judicial organization. — (*Edinburgh rev.*, July, 1883.) D. W. R. [408]

NOTES AND NEWS.

THE death of Dr. John L. LeConte at his home in Philadelphia on Thursday of last week, at the age of fifty-eight, removes one who has long been the leader, *facile princeps*, of American entomologists. With his death, the younger men are completely separated from the former generation of workers in this field, and they will lose a friend and teacher to whom they constantly looked. Dr. LeConte was as highly honored abroad as at home, and has been an active investigator for nearly forty years. His death occurred during the session of the National academy, of which he was a member, but was not known in New Haven until its close. We shall give in a future number an account of his services to science.

— President Arthur, in carrying out an act passed by Congress, has invited the various countries to send representatives to an International conference at Washington, the date of which is not yet fixed, to establish a common prime meridian. The governments of Austria, Norway, and Sweden, have declined; but the latter two approve of the object. Spain is favorable, but has deferred its reply. Belgium is uncertain, but Denmark and Portugal have accepted the invitation conditionally. Switzerland, Venezuela, Mexico, Turkey, Greece, China, Japan, Hawaii, Hayti, Liberia, Holland, Canada, Guatemala, Roumania, Nicaragua, and Honduras have accepted. Replies are expected from Italy, Great Britain, Russia, France, Chili, Brazil, and Germany.

— Mr. Edward Atkinson has prepared a plan for a textile laboratory and museum in Boston. He thinks that a hundred thousand dollars would be ample for the construction of a proper building, and its equipment, which should be an adjunct of the Massachusetts institute of technology. The purpose is to afford special training for young men intending to pursue textile manufacture. The first two years' course of instruction in the institute is suited as a basis for the future special study of textile manufactures; and it is in the next two years of the curriculum that special training should be followed. The first two years would ground the student in modern languages and mathematics, in mechanical drawing, in general

geology and chemistry, as well as in the practical work of the physical and chemical laboratories, and will thus prepare him for entering upon the special course of textile industry. The professional studies would include geology, botany, mechanical engineering, building and architecture, mechanics, textile design in all branches, industrial chemistry, history, and political economy.

— Professor Balfour Stewart and Mr. W. L. Carpenter discussed, before the British Association for the advancement of science, the supposed sun-spot inequalities of short period. Putting aside for the time the question of true or nearly apparent periodicity, they exhibited certain results obtained by application of a method of detecting unknown inequalities in a mass of observations. Thirty-six years' observations of sun-spots were divided into three series of twelve years each. Two apparent sun-spot inequalities of about twenty-six days came out very prominently, appearing for each of the twelve years in the same phase, and to very nearly the same extent.

— A design for a new high-level bridge at Newcastle-on-Tyne has been prepared by W. G. Laws, city engineer. It shows a clear span of six hundred feet, and a clear headway above high water of eighty-two feet. The bridge will be of steel, and the cost of superstructure, foundations, and approaches, is estimated at two hundred and fifty thousand pounds.

— Sir J. Whitworth & Co. have lately completed and tested a 9-inch (23 centimetres) gun for the Brazilian government. The peculiar feature of this system is the hexagonal section of the bore of the gun. The material is compressed cast steel, which is superior to other steels in its combined ductility and tenacity, and in its perfect soundness. This gun, on trial, threw a shell of the weight of 300 pounds (136 kilograms) 7,876 yards (over 7,000 metres), and drove a steel shell weighing 400 pounds (181 kilograms) through a wrought-iron plate 18 inches (48 centimetres) in thickness; and its backing broke up a cast-iron plate supporting it, and finally buried itself in the earth. Such results are not attainable, so far as experience has yet indicated, by any other system of ordnance.

— An electric tram-car was recently tried in Paris very successfully. It was driven a distance of thirty miles in about three hours without accident or detention. The current was supplied by Faure accumulators placed under the seats, and driving a Siemens dynamo under the floor at the rate of twelve hundred revolutions per minute. The car-wheels turn sixty times to twelve thousand revolutions of the dynamo. The speed attained was five and a half to nine miles an hour, according to the gradient.

— In a paper before the British association, Professor Boyd Dawkins remarked that the classification of the tertiary rocks, sketched out some fifty years ago, and since then altered in no important degree, is out of harmony with our present knowledge, and the definitions of the series of events which took place in it has been greatly modified by the process of discovery in various parts of the world. The terms 'eocene,' 'miocene,' and 'pliocene' no longer express the

idea of percentages of living species of fossil mollusca upon which they were founded; and post-tertiary, quaternary, and recent are founded on the assumed existence of a great break comparable to that separating the secondary from the primary or tertiary periods, which is now known not to exist. The author proposed a classification of the tertiary period in Europe by an appeal to the land mammalia, and since that time his definition has been found to apply equally well to the tertiaries of Asia and the Americas and to the late tertiaries of Australia. He stated that the forms of life in the rocks have changed at a very variable rate, and in direct proportion to their complexity of organization; the lower and simpler having an enormous range, while the higher and more complex have a much narrower range, and are more easily affected by the change in their environment.

—The proposed discussion on the possibility of establishing a universal time by selecting a meridian common to all nations has given rise to many suggestions more or less valuable. One of these, published in the *Journal of the society of arts*, is, that 'the simplest way of expressing this universal time would be by using Roman figures; while the civil time would be expressed by Arabic numerals, followed by a large *H* for the morning hours, and a small one for those of the evening. In fact, the hour would be expressed in a manner similar to that in use among the Russians for designating the old and new style in dates. In the same manner as they say 16/28 June, the railway time-tables would say, Arrival at Paris, XXIII./10 h. 24 m.; departure from Paris, XVI. 40 m./4 h. 04 m.; departure from St. Petersburg, VIII. 10 m./9 H. 26 m.

—At the meeting of the French academy of sciences, held Oct. 3, M. Alphonse Milne-Edwards reported the foundation of a new laboratory of marine zoölogy at Marseilles. It is to be under the direction of Professor Marion, of the Marseilles faculty of sciences.

—The periodicity of drought and floods in the Rhine district, and its connection with sun-spots, auroræ, and the magnetism of the earth, is dealt with in a work by Professor Paul Reis of Maintz, just published by Messrs. Quandt and Handel of Leipzig. The volume is entitled 'Die periodische wiederkehr von wassersnoth und wassermangel.'

—In Austria, as well as in Germany and England, systematic efforts are being made to settle the questions as to the contagiousness and heredity of tuberculosis. A circular has been sent to eight thousand medical men in Austria, requesting them to give particulars of any cases which they consider to have proved the contagiousness of the disease, and also to give the particulars of cases of supposed heredity, and of any cases in which complete cure is believed to have been effected. The determined international effort which is being made to cope with this fell disease must be regarded as one of the results of Koch's discovery of the *Bacillus tuberculosis*.

—At a recent meeting of the French entomological society, Dr. Laboulbène instanced a case in which

dipterous larvae had been vomited by a woman thirty-nine years old, under the care of Dr. E. Pichat of La Rochelle. Specimens of the pupa, and of the fly hatched from them (*Curtoneura stabulans* Fall.), were exhibited to the society. The woman had been troubled for some days with bronchitis and very fetid breath, and finally, after a severe attack of coughing, vomited twice. Dr. Pichat afterward found in the basin used a hundred to a hundred and fifty of these larvae; and the circumstances as related by him leave no serious doubt of their source, though he was not present during the vomiting, but only called immediately after it.

This larva, according to Laboulbène, is well known, and is ordinarily found in decomposing animal and vegetable matter, in mushrooms, etc., and has also been reared from caterpillars and hymenopterous larvae.

The possibility of the existence of such flies (*Muscariæ*) in the human body was formerly generally accepted, but has lately been denied by Davaine. Experiments have proved, says Dr. Laboulbène, that such larvae, introduced into the stomach of animals by a fistula, have been discharged alive in the excrement, one, two, or even three days later.

—At the meeting of the Engineers' club of Philadelphia, Nov. 3, Mr. Charles H. Haswell presented 'Notes upon roads, streets, and pavements;' Mr. E. A. Geiseler read an illustrated paper upon 'Tides, and Newton's theory of them;' Mr. Allen J. Fuller spoke of the 'Effect of frost upon fire-plug casings,'—a paper which will be noticed next week under the 'summary.' Professor Haupt also exhibited a 'History of the manual arts, or the inventions of human wit,' published by Mr. Herringman, London, 1661. The secretary read the following account from the *Mexican national* of Laredo, Tex., of a bridge construction by Mr. C. A. Merriam: "On the sixth day of September (the anniversary of loss of bridge last year) the Mexican national railroad-bridge was carried away by high water. On Monday the 16th the first pile was driven for the new structure, which was completed on the 23d; and trains are now running regularly. This is pretty quick work,—the erection of a bridge six hundred feet long in seven days."

The secretary narrated his experience on behalf of the club, and read extracts from correspondence, etc., with the custom-house, through the stupendous inscrutability of the management of which the Transactions of the society of engineers of London, and of the Institution of civil engineers of Ireland, are charged with duty; and all the other foreign societies upon the exchange list of the club are admitted free.

—*Scandinavia*, published in Chicago, is the title of a journal devoted to the interests of Scandinavian life, past and present. It is printed in English, and is intended to keep the American public informed as to the movements, both in politics and literature, among the people of Denmark, Sweden, and Norway. The first number is dated November, 1883.

—Lindström has published in the *Bihang* to the Swedish academy's *Handlingar* an annotated index to the generic names applied to the corals of the

paleozoic formations. A list, by Dalla Torre, of the generic names given to Hymenoptera during the decade 1869-79, appeared in Katter's *Entomologische nachrichten* of last December.

—The *Humoristické listy* of Prag for Oct. 27 contains an excellent large portrait of the late Mr. Barande. We shall publish one next week.

—The mathematical magazine conducted under the name of the *Analyst* for the past ten years, by Mr. J. E. Hendricks, will be continued under the editorial charge of Ormond Stone, professor of astronomy, and William M. Thornton, professor of engineering, with the title, *Annals of mathematics, pure and applied*. The numbers will be issued at intervals of two months, beginning Feb. 1, 1884. In scope the journal will embrace the development of new and important theories of mathematics, pure and applied; the solution of useful and interesting problems; the history and bibliography of various branches of mathematics; and critical examinations and reviews of important treatises and text-books on mathematical subjects. The office of publication will be at the University of Virginia.

—Dr. Macgowan recently sent a communication to the *North China herald* on the art of making luminous paint in the celestial empire. The Chinese, says Dr. Macgowan, used powdered mussel-shells instead of oyster-shells. The method seems to be ancient. The emperor, Tai Tsung, who flourished towards the end of the tenth century of the Christian era, received a picture which was luminous by night. The picture represented, by night, a cow lying within a fence; while, by day, the cow appeared as browsing outside of the enclosure. His Majesty asked for an explanation from his ministers, but they were no better informed than he. At length some one informed the emperor that the effect was produced by mixing Southern-Sea pearl-paste with a pigment which at night became luminous, and that the day-picture was made of a powdered reef-stone. In after-ages the picture was attributed to the genii, whilst some denied its existence altogether. Dr. Macgowan shows, by extracts from a Chinese writer of three centuries ago, that the tradition of the art had not died out.

—The meeting of the Philosophical society of Washington, held Nov. 10, was devoted to the consideration of geologic subjects. Mr. Edwin Smith exhibited a seismographic record obtained in Japan, and described the system of observations conducted by Professor Paul. Capt. C. E. Dutton read a paper entitled 'The volcanic problem stated,' and Mr. W. J. McGee made a communication on the 'Drainage system, and the distribution of loess, in eastern Iowa.'

—John T. Short, professor of history at the Ohio State university at Columbus, died Dec. 11, after a long illness. He was especially well known for his researches in the history of Central America. His 'North-Americans, and their early history,' passed through many editions.

—The papers read at the meeting of the Biological society of Washington, Nov. 16, were by Professor Lester F. Ward, Mesozoic dicotyledons; Mr. C. D. Walcott, Fresh-water shells from the lower carbonif-

erous, with exhibition of specimens; Mr. Frederick W. True, Exhibition of a unique specimen of a West-Indian seal, *Monachus tropicalis* Gray; Dr. C. A. White, Persistence of the domestic instinct in the cat.

—An unpretending but useful little paper has been lately published as Bulletin no. 5 of the Illinois state laboratory of natural history, by N. S. Davis, jun., and Frank L. Rice. This paper contains concise descriptions of seventy-four species and sub-species of North-American batrachians, and fifty-four of reptiles, found east of the Mississippi. Analytical keys to the families and genera are given, but no synonymy. The classification and nomenclature are those of Professor Cope's Check-list, and the descriptions are in great part compiled from writings of the same author. There is, however, evidence of considerable study of specimens; and the collector of reptiles in the region covered will find this catalogue very convenient.

—A boy fourteen years of age was fishing at Tomioka, Nizen, Japan, recently, when his right arm was seized by a large octopus with two of its tentacles. His cries brought succor as he was being dragged into the water, and the tentacles were cut. The lad reached home; but his arm seemed paralyzed, and in five days death ensued, probably from shock.

—H. Schällibaum recommends a mixture of one volume of collodion with three to four volumes of oil of cloves, to secure microscopic sections in place upon the slide. The oil is evaporated over a water-bath, after which the sections may be stained, etc. An advantage is thus offered over Giesbrecht's shellac method. The full directions are given in the *Archiv für mikroskopische anatomie* (xxii. 689).

—Four mummies have been obtained from the Aleutian region for the Berlin museum. They are in a good state of preservation, and are believed to be of great age.

—M. A. Dumont has submitted to the Paris academy of sciences a suggestion for increasing the irrigating waters derived from the Rhone by regulating the discharge from the Lake of Geneva. This project, recommended by the Geneva commission, involves the expenditure of about £180,000, and the creation of a hydraulic force of 7,000-horse power, by which the level of the lake at high water might be reduced by at least 0.60 m., and the minimum discharge of the Rhone at the outlet increased by 80 mc. per second.

—The science of forestry has hitherto been much neglected in England: but the *Athenaeum* states that the proposal to hold an International forestry exhibition in Edinburgh during the summer and autumn of next year has been taken up with much earnestness; and the sum of £3,500 has already been obtained as a guaranty fund, without any direct appeal to the public at large. Besides specimens of forest produce, implements used in forestry, fungi, rustic work, etc., there will be a collection of illustrations of trees, scenery, forest labor, and the like, along with books, maps, and reports bearing on forest history, surveys, and the geographical distribution of trees.